

File 155:MEDLINE(R) 1950-2009/Dec 10
 (c) format only 2009 Dialog
 *File 155: Medline has resumed updating with UD20091210.
 File 5:Biosis Previews(R) 1926-2010/Jan W3
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 File 136:BioEngineering Abstracts 1966-2007/Jan
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 *File 136: This file is closed.
 File 95:TEME-Technology & Management 1989-2010/Dec W3
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 *File 2: IPC codes have been added to the file. See HELP NEWS 2
 for details.
 File 144:Pascal 1973-2010/Jan W2
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S1 76556 INSOLE? ? OR SHOE OR SHOES OR MIDSOLE? ? OR OUTSOLE? ? OR
 FOOTWEAR OR FOOT() (GEAR OR WEAR) OR BOOT OR BOOTS OR FOOTGEAR
 OR OVERSHOE? ?
 S2 180528 SOLE OR SOLES
 S3 250615 S1 OR S2
 S4 43865 S3/2004:2007
 S5 21287 S3/2008:2010
 S6 185463 S3 NOT (S4 OR S5)
 limitall/s6
 S7 27542 SHOCK OR PRESSURE OR CUSHION? OR FLUID OR GAS OR LIQUID OR
 IMPACT OR JOLT? OR SUSPENSION OR PNEUMATIC?
 S8 4770 (DUAL OR TWO OR DOUBLE OR SET OR SECOND OR SECONDARY OR AD-
 DITIONAL OR BOTH OR TWOFOLD OR ANOTHER) (5N) (CONTROL? OR ADJU-
 ST? OR CORRECT? OR COMPENSAT? OR REGULAT? OR CHANG? OR MODIF?
 OR ATTENUAT? OR DAMPEN?)
 S9 2618 (DUAL OR TWO OR DOUBLE OR SET OR SECOND OR SECONDARY OR AD-
 DITIONAL OR BOTH OR TWOFOLD OR ANOTHER) (5N) (MODE OR MODES OR -
 MEANS OR METHOD? ?)
 S10 62878 CONTROL? OR ADJUST? OR CORRECT? OR COMPENSAT? OR REGULAT? -
 OR CHANG? OR MODIF? OR ATTENUAT? OR DAMPEN?
 S11 360 (MULTIPLE OR MULTI OR MANY OR NUMEROUS OR PLURALITY OR MOR-
 E()THAN OR SEVERAL OR NUMBER OR BI()DIRECTION? OR BIDIRECTION-
 ?) (5N) (PIPE OR PIPES OR TUBES OR AIRWAY? ? OR TUBE OR CHANNE-
 L? ? OR TUBULAR OR CYLINDER?)
 S12 600 (SINGLE OR SOLO OR ONE) (5N) (PIPE OR PIPES OR TUBES OR AIR-
 WAY? ? OR TUBE OR CHANNEL? ? OR TUBULAR OR CYLINDER?)
 S13 993 (SINGLE OR SAME OR ONE) (5N) (DEVICE OR ADJUSTER OR SCREW OR
 KNOB OR ELEMENT OR BUTTON OR APPTS OR APPARATUS OR VALVE)
 S14 758 S3(S)S7(S)S8

S15	28	S14(S) (S11:S13)
S16	27	RD (unique items)
S17	27	S16 AND (S1 OR S2)
S18	22683	S3(S) S7
S19	374	S18(S) S9
S20	21	S19(S) (S11:S13)
S21	8005	S3(S) S7(S) S10
S22	8	S21(S) S11(S) S12
S23	1	S21(S) S11(S) S13
S24	174	S21(S) (S11:S13)
S25	9	S21(S) S12(S) S13
S26	5058	S7(20N) S10
S27	105	S26(S) (S11:S13)
S28	119	S20 OR S22 OR S23 OR S25 OR S27
S29	95	S28 NOT S17
S30	95	S29 AND (S1 OR S2)
S31	75	RD (unique items)

17/7/3 (Item 1 from file: 23)

DIALOG(R)File 23: CSA Technology Research Database

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0012396792 IP Accession No: 200909-71-1281013; 200909-61-1305504; 20091274821; A09-99-1752416

Shoe ventilation and shock absorption mechanism

Ridinger, Michael R

, USA

Publisher Url: [http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netahtml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=75 78074.PN.&OS=pn/7578074&RS=PN/7578074](http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netahtml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=75%2078074.PN.&OS=pn/7578074&RS=PN/7578074)

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

An article of **footwear** has ventilation and **shock** absorption provided by a mechanism which may be constructed within or added to the **footwear**. A first chamber beneath the heel draws external air through a conduit which includes a **one-way valve**. As a wearer walks, the heel compresses the first chamber, forcing the air through a special second valve causing directional airflow to a **second** chamber in a **controlled** manner thereby absorbing the **shock** of the heel strike in the same manner a **shock** absorber functions in an automobile. As weight is transferred from the heel to the ball of the foot, further **cushioning** is provided by the second chamber. Specifically designed vents connected to the second chamber allow air to be forced into the region of the **shoe** around the foot. Expansion of the air from these vents affects cooling and drying of the foot through evaporation and convection.

17/7/20 (Item 18 from file: 23)

DIALOG(R)File 23: CSA Technology Research Database

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0008625042 IP Accession No: 200802-71-155999; 200802-60-155927; 2008147506; A08-99-151975

Golf shoe with high liquid pressure spike ejection

Peckler, Stephen N; Malloy, James A
, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netahtml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=6125556.PN.&OS=PN/6125556&RS=PN/6125556>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

A golf **shoe sole** comprising ejecting and retracting spikes, the improvement wherein said **sole** contains a high **pressure liquid** pump assembly in communication with a **plurality** of housed **cylinder** assemblies each of which contain a slidable spike with seal, wherein extreme **pressure** being exerted upon contained **liquid** equals extreme firmness of ejected spikes. Said pump having shifting means of a four way rotatory spool valve for the control of ejection and retraction in either auto or manual mode, or said pump being one of the two, the former manual operating by way of lever reciprocating upon a piston. The latter auto, operating by way of a diaphragm located on the bottom soul of the back of the heel. Said diaphragm being subject to intense momentary **pressure** generated by the weight transference from the forward walking motion of the human wearer. An exclusively manual pump requiring only a **two** way ball, seat, and stem **control** valve. **Liquid** being drafted from a balloon type reservoir, then through a sequence of valves, is urged via conduit housing to act upon said sliceable spike assembly. Said spike assembly comprised of said socket, a sliceable spike with seal, a certain spring, which under compression collapses within it's self, a gasket and a threaded cylinder. Said cylinder has the absence of threads on it's upper portion, said upper portion has a smaller diameter than the root diameter of existing threads on it's lower portion. Thusly when the unit is assembled a space exists to accommodate **liquid** flow from ports positioned lower than the cylinder top. **Liquid** flow then travels over the top of inner cylinder walls and into said inner cylinder. Said cylinder has an outer domed convex bottom, identical in size and shape to that of conventional golf spikes, said outer bottom having two small blind bores enabling spike replacement with a conventional tool in the field. Said cylinder incorporates a gasket shoulder into it's shape, and has a small bushing bore in it's bottom to allow said spike to eject out for use.

31/7/12 (Item 4 from file: 23)

DIALOG(R)File 23: CSA Technology Research Database
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0012149305 IP Accession No: 200906-71-1136545; 200906-61-1157784; 20091116313; A09-99-1119820

Device For Controlling The Flex Of Ski And The Like Boots

Aldinio, Giuseppe; Baggio, Giorgio
, Canada

or **boot**.

31/7/37 (Item 29 from file: 23)

DIALOG(R)File 23: CSA Technology Research Database

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0010276243 IP Accession No: 200809-71-1766660; 200809-61-1868911; 20081719477; A08-99-1823146

Cushioning impact structure for footwear

Hutcheson, Robert E

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netahtml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=5067255.PN.&OS=pn/5067255&RS=PN/5067255>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

A cushioning and impact absorbing **insole** device adapted to be placed within articles of **footwear** including an upper layer and a lower layer formed of a flexible fluid impermeable material. The upper and lower layers are sealed together by a plurality of spaced surface lines contoured to parallel each other from the outer peripheral edges to a selected inner spaced surface line thereby forming a **plurality** of sealed laterally spaced **tubular** members. The inner spaced surface line forms the inner main chamber which includes a heel chamber section, an arch chamber section, and a metatarsal chamber section. A transverse portion of the upper and lower layers of the arch chamber section are sealed together by spaced surface lines to form a plurality of **fluid** metering jet conduits. The transverse metering jet conduits **control** the flow of **fluid**, contained within the **insole** device, as it flows back and forth between the heel chamber section and the metatarsal chamber section as a result of transmission of forces of impact encountered by the foot of the wearer during application. The volume of fluid disposed within the chambers of the **insole** device only partially fills all of the chambers. The laterally spaced tubular members are adapted to be separately and selectively removed to thereby reduce the size of the **insole** device to thereby conform to the size of a selected **foot wear** article.

31/7/48 (Item 40 from file: 23)

DIALOG(R)File 23: CSA Technology Research Database

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0009457040 IP Accession No: 200806-71-735060; 200806-61-837344; 2008708698; A08-99-812730

Shoe having hydrodynamic pad

Dean, Todd; Dreyer, Eric; Fredericksen, Raymond M

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netahtml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=5704137.PN.&OS=pn/5704137&RS=PN/5704137>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

A hydrodynamic pad including fluid-filled inner and outer bladders interconnected by fluid channels and configured such that displacement of fluid from the center of pressure distribution generated by foot impact radiates from the inner bladder outwardly to the outer bladder through **one** or more of the fluid **channels** causing the outer bladder to expand to an expanded condition. The expanded outer bladder seats the wearer's heel in the hydrodynamic pad, thereby stabilizing the foot of the wearer, and the **controlled** flow of **fluid** through the **fluid** channels to the outer bladder dissipates the **impact** loads, thereby **cushioning** the wearer's heel. When the pressure is released from the inner bladder, by lifting the wearer's heel, the expanded outer bladder forces at least a portion of the displaced fluid to the inner bladder, such that the hydrodynamic pad is reinitialized.

File 350:Derwent WPIX 1963-2009/UD=201006
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File 347:JAPIO Dec 1976-2009/Sep(Updated 091230)
(c) 2010 JPO & JAPIO
File 344:Chinese Patents Abs Jan 1985-2006/Jan
(c) 2006 European Patent Office
File 371:French Patents 1961-2002/BOPI 200209
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S1 182808 INSOLE? ? OR SHOE OR SHOES OR MIDSOLE? ? OR OUTSOLE? ? OR
FOOTWEAR OR FOOT() (GEAR OR WEAR) OR BOOT OR BOOTS OR FOOTGEAR
OR OVERSHOE? ? OR SOLE OR SOLES
limitall/s1
S2 42739 SHOCK OR PRESSURE OR CUSHION? OR FLUID OR GAS OR LIQUID OR
IMPACT OR JOLT? OR SUSPENSION OR PNEUMATIC?
S3 63437 CONTROL? OR ADJUST? OR CORRECT? OR COMPENSAT? OR REGULAT? -
OR CHANG? OR MODIF? OR ATTENUAT? OR DAMPEN? OR ABSORB? OR ABS-
ORPTION
S4 8424 (DUAL OR TWO OR DOUBLE OR SET OR SECOND OR SECONDARY OR AD-
DITIONAL OR BOTH OR TWOFOLD OR ANOTHER) (5N) (CONTROL? OR ADJUS-
T? OR CORRECT? OR COMPENSAT? OR REGULAT? OR CHANG? OR MODIF? -
OR ATTENUAT? OR DAMPEN? OR ABSORB? OR ABSORPTION)
S5 7356 (DUAL OR TWO OR DOUBLE OR SET OR SECOND OR SECONDARY OR AD-
DITIONAL OR BOTH OR TWOFOLD OR ANOTHER) (5N) (MODE OR MODES OR -
MEANS OR METHOD? ?)
S6 2068 (MULTIPLE OR MULTI OR MANY OR NUMEROUS OR PLURALITY OR MOR-
E() THAN OR SEVERAL OR NUMBER OR BI() DIRECTION? OR BIDIRECTION-
?) (5N) (PIPE OR PIPES OR TUBES OR AIRWAY? ? OR TUBE OR CHANNE-
L? ? OR TUBULAR OR CYLINDER?)
S7 3893 (SINGLE OR SOLO OR ONE) (5N) (PIPE OR PIPES OR TUBES OR AIR-
WAY? ? OR TUBE OR CHANNEL? ? OR TUBULAR OR CYLINDER?)
S8 9925 (SINGLE OR SAME OR ONE) (5N) (DEVICE OR ADJUSTER OR SCREW OR
KNOB OR ELEMENT OR BUTTON OR APPTS OR APPARATUS OR VALVE)
S9 1927 S2(S)S4
S10 2881 S2(S) (S4 OR S5)

S11	24	S10 (S) S6 (S) S7
S12	52	S10 (S) (S6 OR S7) (S) S8
S13	68	S11 OR S12
S14	68	S13 AND S1
S15	10293	S2 (10N) S3
S16	54	S15 (S) S6 (S) S7
S17	12	S16 (S) (S6 OR S7) (S) S8
S18	54	S16 OR S17
S19	44	S18 NOT S13
S20	44	S19 AND S1

14/25,K/37 (Item 37 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0008788527 *Drawing available*

WPI Acc no: 1998-332958/199829

XRPX Acc No: N1998-259890

Air-cushioned sole - comprises rear, middle and front air chambers, with unidirectional valve arranged between rear and middle chambers, and switch being located between middle and front air chambers, with tube joining front and rear chambers

Patent Assignee: CHEN Z (CHEN-I)

Inventor: CHEN Z

Patent Family (2 patents, 70 countries)				
Patent Number	Kind	Date	Update	Type
WO 1998024338	A1	19980611	199829	B
AU 199851869	A	19980629	199845	E

Local Applications (no., kind, date): WO 1997CN140 A 19971205; AU 199851869 A 19971205

Priority Applications (no., kind, date): CN 1996244563 U 19961206

Alerting Abstract WO A1

The **sole** comprises a rear air chamber (1), a middle air chamber (2) and a front air chamber (3). A unidirectional valve (4) is arranged between the rear and the middle air chambers.

A switch (5) is located between the middle and front air chambers, for controlling the on-off of two air chambers. An air transmission tube (6) joins the front and the rear air chambers; and a unidirectional valve (7) is disposed at one end of the air transmission tube.

Air-cushioned sole - Original Titles:FULL AIR SOLE **Alerting Abstract ...**The **sole** comprises a rear air chamber (1), a middle air chamber (2) and a front air... **Title Terms .../Index Terms/Additional Words:** **SOLE**; **Class Codes** Original Publication Data by AuthorityArgentina**Publication No.**

Original Abstracts: This discloses a kind of filled air **sole**, which comprises a **rear** air chamber (1); a middle air chamber (2); a front air chamber (3); a unidirectional... ... transmission tube. For this comprises three air chambers, the pound force might change the high-**pressure** air storage when **the** heel strikes ground and the energy might release rapidly elastic force to act on the **sole** when walk, run **and** jump. This invention can be used for every **shoe**.

14/25,K/41 (Item 41 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0008215219 *Drawing available*
WPI Acc no: 1997-320202/199730
XRPX Acc No: N1997-265106

Fluid cushioning and supporting device for article of footwear - has fluid-containing pods communicating with each other via fluid communication channels, each pod directly connected to eight surrounding pods

Patent Assignee: PAGEL T A (PAGE-I)

Inventor: PAGEL T A

Patent Family (2 patents, 2 countries)				
Patent Number	Kind	Date	Update	Type
CA 2185834	A	19970319	199730	B
US 5784807	A	19980728	199837	E

Local Applications (no., kind, date): CA 2185834 A 19960918; US 19953887 P 19950918; US 1996715244 A 19960918

Priority Applications (no., kind, date): US 19953887 P 19950918; US 1996715244 A 19960918

Alerting Abstract CA A

The device comprises a support member of a shape suited to cushion a foot or selected portions. Fluid-containing pods (6) spaced apart from one another are formed throughout the support member for absorbing shocks encountered by the **footwear**. Fluid communication channels (8) are positioned between the fluid-containing pods for interconnecting them and maintaining fluid communication. Each of the pods has at least four fluid communication channels extending from them, directly connecting each pod to four adjacent pods. Each channel intersects (14) another channel which directly interconnects each of the fluid-containing pods at eight adjacent fluid-containing pods through the fluid communication channels.

ADVANTAGE - Fluid filled cushioning reduces force exerted on inner surface of bladders. Number of channels helps return fluid quickly to cell after impact.

Original Abstracts:A fluid filled support system for **footwear** having a closed **system** of interconnected pods filled with fluid for providing enhanced cushioning, support, and fit. The fluid... .. another and at least partially filled with a fluid for absorbing shocks encountered by the **footwear**. A plurality of **fluid** communication channels are positioned between the fluidcontaining pods for interconnecting the pods and maintaining all... .. to attach the pod to at least three adjacent fluid-containing pods. The fluid communication **channels** may **intersect** with **one** another to provide **additional fluid** pathways for connecting **additional fluid**-containing pods to **each** pod. As **pressure** is applied by a wearer's foot, the support member reacts by forcing the entrapped **fluid** to redistribute through the interconnected pods. Once the area of high **pressure** is relieved, the **shoe** again reaches a level of equilibrium. This flow of redistributing **fluid** between interconnected pods **provides** the desired **cushioning** and support of the wearer's foot, wherein the multiple **fluid** paths connected to each pod provide a more responsive **cushioning** system.

14/25,K/66 (Item 66 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0002591291

WPI Acc no: 1982-N6758E/198242

Shock absorbing shoe sole construction - has fluid-filled cushion embedded in heel and front transverse arch regions

Patent Assignee: PETERSON L G B (PETE-I)

Inventor: PETERSON L G B

Patent Family (9 patents, 13 countries)				
Patent Number	Kind	Date	Update	Type
EP 62622	A	19821013	198242	B
NO 198200989	A	19821025	198246	E
SE 198102124	A	19821101	198246	E
FI 198201012	A	19821130	198301	E
DK 198201319	A	19830214	198313	E
US 4458430	A	19840710	198430	E
EP 62622	B	19871216	198750	E
DE 3277831	G	19880128	198805	E
KR 198801446	B	19880810	198850	E

Local Applications (no., kind, date): EP 1987106804 A 19870511; SE 19812124 A 19810402; US 1982363635 A 19820330; EP 1982850059 A 19820324
Priority Applications (no., kind, date): SE 19812124 A 19810402

Alerting Abstract EP A

The **shoe sole** has two cushions (8,9) embedded in it beneath the heel and beneath the front transverse arch. The cushions are partly filled with fluid and are connected by a channel (11) so that compression of one cushion causes fluid to flow into the other to expand it.

During walking motion, as the heel touches the ground the fluid expands the front cushion to support the front arch as the weight is transferred to the front of the foot. The transference of weight also forces the fluid into the rear cushion to support the heel when it next strikes the ground.

Original Abstracts:Shoe sole construction.

A **shoe sole** construction designed so as to be biodynamically shock-absorbing.

In the **sole** (2) are provided two cushions (8, 9) which are filled with a fluid (10) and... .. positioned underneath the transverse forward arch (7) of the foot.

When the wearer of the **shoe** sets down his foot into contact with the ground, the heel strikes the ground first... .. A **shoe sole** construction designed so as to be biodynamically shock-absorbing. In the **sole** are provided two cushions which are filled with a fluid and interconnected by means of a **number** of **channels**. **One cushion** is positioned underneath the heel of the foot and the other **cushion** is positioned underneath the transverse forward arch of the foot. When the wearer of the **shoe** sets down his foot into contact with the ground, the heel strikes the ground first and a **shock**-absorbing effect is then obtained as the rear **cushion** is compressed. Upon this compression, **fluid** flows from the rear **cushion** to the front **cushion**, which expands and lifts the front arch of the foot, releaving the weight

thereon and... .. is set down on the ground. When the wearer continues the walking cycle, the forward **cushion** is compressed, causing the rear **cushion** to expand and the latter is again ready to provide a **shock**-absorbing effect upon the next step and heel strike.

20/25,K/22 (Item 22 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0008395089 *Drawing available*

WPI Acc no: 1997-511359/199747

XRFX Acc No: N1997-425730

Air circulating footbed adapted to be removably inserted into shoe - includes main channel extending from bump, and system of intersecting channels in communication with the main channel, this system having ventilation holes formed in the layer of mouldable material

Patent Assignee: ROCKPORT CO INC (ROCK-N)

Inventor: CINTRON A G

Patent Family (1 patents, 1 countries)				
Patent Number	Kind	Date	Update	Type
US 5675914	A	19971014	199747	B

Local Applications (no., kind, date): US 1995557757 A 19951113

Priority Applications (no., kind, date): US 1995557757 A 19951113

Alerting Abstract US A

The footbed is constructed from a layer of mouldable material moulded with a concave bump in the heel area and a number of concave, intersecting channels in the remainder of the footbed. Both the concave bump and the channels have perforations which extend completely through the footbed and allow for the circulation of air in a **shoe**. The layer of mouldable material is topped with a layer of anti-microbial foam for cushioning and bacteria prevention and which in turn is topped with a sock-contacting layer.

The ventilation holes perforate the anti-microbial foam layer and the sock-contacting layer. A disc or cylindrically shaped open-celled foam sits within the concave bump to bias the bump in an upright position and a layer of shock absorbing material extends underneath the bump and the open-celled foam. The layer of mouldable material may end at a step corresponding to the ball of a wearer's foot so as to increase forefoot flexibility.

ADVANTAGE - Is capable of circulating air through the interior of the **shoe**. Does not destroy the integrity of the exterior of the **shoe**. Does not deter from the flexibility of the forepart of the **shoe**.

20/25,K/26 (Item 26 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0007712521 *Drawing available*

WPI Acc no: 1996-335126/199634

XRFX Acc No: N1996-282489

Massage appliance for foot soles - has housing and base plate with pressure regulator, two top and bottom plates with elastic elements in between and motors which drive massage pins

Patent Assignee: LIN P (LINP-I)

Inventor: LIN P

Patent Family (2 patents, 2 countries)				
Patent Number	Kind	Date	Update	Type
DE 29607365	U1	19960718	199634	B
US 5681266	A	19971028	199749	E

Local Applications (no., kind, date): DE 29607365 U 19960423; US 1996623114 A 19960328

Priority Applications (no., kind, date): DE 29607365 U 19960423

Alerting Abstract DE U1

The base plate (13) on which is mounted a **pressure regulator** is mounted in the bottom of the housing (1) and has several **tubular** sections (131,132) supporting two bottom plates (14). Elastic elements (16) on the bottom plate (14) support two top plates (17). A first motor (4) on the base plate is mounted between the two bottom plates.

A driven shaft is connected to a worm shaft (41) engaging with a worm gear (42) mounted on a shaft both ends of which have a disc (43) with eccentric pin (44). The pin extends in an elongated slot in a block (142) rigidly positioned on one underside of the bottom plate. Massage pins (3) on carriages (2) point to gaps in the housing. Slide rods (21) on the carriages fit into a **tubular** section on **one** end of a rocker bar. Two other motors (20) are inside a housing and slot in a carriage.

ADVANTAGE - The improved massage appliance for the **soles** of feet promotes general health.

20/25,K/40 (Item 40 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0005164437 *Drawing available*

WPI Acc no: 1990-154473/199020

Related WPI Acc No: 1992-208197

XRAM Acc no: C1990-067439

XRPX Acc No: N1990-119953

Cushion and impact absorbing structure for footwear - has rectangular parallel channels with tubular inflated cells

Patent Assignee: HOROVITZ Z (HORO-I); ZVI HOROVITZ (ZVIH-N)

Inventor: HOROVITZ Z

Patent Family (3 patents, 4 countries)				
Patent Number	Kind	Date	Update	Type
US 4914836	A	19900410	199020	B
EP 410087	A	19910130	199105	E
EP 410087	A3	19920318	199326	E

Local Applications (no., kind, date): US 1989350304 A 19890511; EP 1990108674 A 19900508; EP 1990108674 A 19900508

Priority Applications (no., kind, date): US 1989350304 A 19890511

Alerting Abstract US A

Shock absorbing material which can form at least a portion of a **footwear insole** or insert, comprises layers (12), (14) of knitted or woven stretch-resistant strand matl., connected by partitions (18) of similar material. The partitions define generally rectangular parallel channels (22), and at least a majority of the channels have disposed therein fluid-impermeable tubular cells (24) which are inflated within the confines of the channels to provide cushioning and impact absorption to the material. The material can be laminated to form three layers. It can also have a fluid impermeable metalized layer on its upper surface.

USE/ADVANTAGE - The material. is used in **footwear** or other articles requiring impact absorbing features, e.g. cushions for automobiles. It reduces foot fatigue, and the energy necessary to run in an athletic event.